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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Francois Michaud

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EXAMINER

YEAGLEY, DANIEL S

ART UNIT

PAPER NUMBER

3611

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/724,519	MICHAUD ET AL.	
	Examiner	Art Unit	
	Daniel Yeagley	3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-71 is/are pending in the application.
- 4a) Of the above claim(s) 38-41 and 71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-13, 15-29, 32-37 and 42-70 is/are rejected.
- 7) ☒ Claim(s) 8, 14, 30 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/10/04, 7/29/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, “the driven wheel 164 being larger than the driving wheel 162” as claimed in claim 17; must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because:
 - a. reference character “214”; in figure 15A, has been used to designate both plates and a block.
 - b. reference character “178”; in figure 13 and figure 10, has been used to designate both axle bearing and a driving wheel support bearing.
 - c. reference characters “110” (at center of drawing of figure 7), has been used to designate both a “mounting assembly” and a “worm gear”.
 - d. reference characters “308”; in figure 20, has been used to designate both control system and a micro-controller.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "314" and "316" have both been used to designate remote control system; figure 2, 16 and 23; paragraph 0073 and 00185.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:
 - e. Numeral “22”; as cited in paragraph 0094.
 - f. Numeral “195”; as cited in paragraph 00108.
 - g. Numeral “30”; as cited in paragraph 0085.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

- h. Numeral “40”; as shown in figure 2.
- i. Numeral “97”; as shown in figure 5.

6. The drawings are further objected to because:

- j. In figure 2, the mounting bracket; numeral “52” and the remote control system; numeral “314” should be interchanged.
- k. In figure 8, the leader line from numeral “124” is not drawn to a rod.
- l. It is unclear what the two unknown components are shown at center of figure 7; one component being labeled numeral “114” and drawn between numerals 110 and 112; and the other unknown component “not marked” is drawn between the belt 142 and the rod; labeled 110, next to the internal toothed gear 134.

7. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

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renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

8. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. However, the disclosure is objected to because of the following informalities:

- a. Numeral "312" has been used to designate various elements; paragraph 0074 and paragraph 189; refers to numeral 312 as one of "a central controller", two "a communication control system" and third "a central control system".
- b. Paragraph 0079, after the phrase "cover plate 70", applicant should insert the phrase --(i.e. mounting plate)-- in order to give reference to the term used in the claim 33.
- c. Paragraph 0096, line 1, the numeral "24" should be changed to numeral --22--.
- d. Paragraph 00114, line 4, numeral "198" should be changed to numeral --196--.
- e. Paragraph 00146, line 5, numeral "322" should be changed to numeral --312--.
- f. Paragraph 00154, line 1, numeral "396" should be changed to numeral --306--.
- g. Paragraph 00161, line 7, numeral "338" should be changed to numeral --302--.

Appropriate corrections are required.

Claim Objections

9. Claims 8, 9, 15 and 36 are objected to because of the following informalities:

Regarding claim 8, the term, “*said* first mounting plate” lacks proper antecedent basis.

Regarding claim 8, the term, “*the* circumference” lacks proper antecedent basis.

Regarding claim 8, the term, “*said* second mounting plates” lack proper antecedent basis.

Regarding claim 9, the term, “*said* first mounting plate” lacks proper antecedent basis.

Regarding claim 15, the word, “sided” should be changed to --sides--.

Regarding claim 36, the word, “unto” should be changed to --onto--.

Regarding claim 48, the word, “synchronisation” should be changed to -synchronization-.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claim 14 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for “a threaded portion of the adjustment rod 208 abutting a block 200”, does not reasonably provide enablement for an adjustment bolt (?) abutting a plate (202). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

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12. Claim 27 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Although paragraph 0090-0091 disclose the term “work reducing means” and it is assumed to be drawn to a gear type of steering arrangement which would provide a steering movement in a rotational effect, but it is unclear from the specification how a steering gear assembly provides a lever effect. As best understood, it would be the track tensioning assembly’s driving mechanism 114 that would provide a lever effect to the locomotion member (leg 18).

13. Claims 28 and 42 - 70 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Although paragraphs 0021 - 0024 disclose the terms a “steering controller, power supply controller, environment recognition module controller and paragraph 0091 cites the term “ pivot-controlling means”, however; the detailed section of the specification lacked any recitation pertaining to these terms that clearly discloses what the metes and bounds are for these terms.

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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15. Claims 4, 7, 13, 14, 63 and 64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Regarding claim 4, the term, “a pivoting actuator” lacks sufficient antecedent basis because it is unclear; from the specification, what element of the steering assembly is considered as the pivoting actuator.

b. Regarding claim 13, the term “said frame support” lacks antecedent basis and it is unclear if applicant is referring to the support frame cited earlier or if applicant is trying to claim some other element.

c. Regarding claim 14, the term “its” is considered indefinite.

d. Regarding claims 7, 63 and 64, the terms “type” are considered indefinite.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 1 – 7, 9 – 11, 18 – 20, 24 – 29 and 32 – 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Fletcher et al ‘287.

Fletcher shows a robotic platform 10 comprising four locomotion members (figure 6), at least two locomotion members 40 being mounted to a body 12 and chassis via a steering assembly, wherein the steering assembly 20 includes a motor 72 secured to the chassis via a motor bracket 38 (figure 5), wherein a steering controller includes pivot-controlling means so as to pivot in a first plane relatively to the body and wherein the steering assembly includes work reducing means providing a lever effect between the chassis and the locomotion member (figure 2), the locomotion members include an endless track assembly (figure 3) having a driving wheel 60, with a protective disk 38 which is covered by a coating (surface) and is mounted on a peripheral surface of the driving wheel and extends radially from the driving wheel, a drive system (figure 5) *for* driving the driving wheel that includes a driven wheel 52, an endless track 54 and a track tensioning assembly 44 and at least one controller 18 mounted to the body and coupled to at least two locomotion members configured to actuate the movement of the locomotion members with a power supply system 74 mounted to the body and coupled to at least one controller, such that each of the locomotion members includes a locomotion controller *for* actuating the drive system *for* energizing the at least one controller and the at least two locomotion members (column 2-9), wherein the drive system includes components that are readable as being a mounting assembly, a driving wheel actuator, a driving mechanism and a driving wheel support structure mounted to the mounting assembly (figure 2-6), wherein the steering assembly includes a pivoting actuator and has at least one controller configured to control a driving wheel actuator, a driving mechanism and a pivoting actuator (column 2 - 9), wherein the mounting assembly includes first and second mounting plates 42 and 82 secured to one another so as to face each other and provides a gap therebetween, wherein the driving wheel

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actuator includes a disk type motor 74 having an output driving shaft 76 mounted to the second mounting plate 82 on a side opposite the first mounting plate 42 so that the output driving shaft extends through the second mounting plate towards the first mounting plate and includes an internally toothed gear (clutch gear 84) coaxially mounted on the second plate between the first and second plates and operatively coupled to the output driving shaft of the motor via a pulley assembly (gears; column 5), wherein the driving mechanism includes the inner toothed gear 84 being mounted to the track-tensioning assembly and the motor shaft being mounted to the first mounting plate via clutch gears and includes a configured speed-reduction gear set as broadly claimed, and the track-tensioning assembly includes a support frame (leg 44 and chain 64) which are mounted within the endless track 54 to both the driving wheel 60 and the driven wheel 52 therebetween, such that the driving wheel is received in a ring portion (chain) of the support frame, and wherein the body further includes handles secured to columns (seat frame) having a mounting plate (seat) mounted on top of the chassis via the columns that allows receiving equipments (operator and controller 18 the comprises at least one interface panel) carried by the robotic platform and wherein the robotic platform further comprises at least one environment recognition module 17 mounted on one of the at least two locomotion members, and wherein a shell is mounted onto the chassis with shell portions 14 that are removably secured to the chassis and selectively allow access to internal parts 17 of the body as broadly claimed.

18. Claims 42 – 45, 48 – 70 are rejected under 35 U.S.C. 102(e) as being anticipated by Torrie et al '788.

Torrie shows a robotic platform comprising body and chassis, a locomotion assembly with at least two locomotion members mounted to the body (figure 6), wherein each locomotion member includes a drive assembly and a locomotion controller (figure 7-10), and includes a steering assembly with a steering mechanism coupled to a steering controller, and further discloses an environment recognition module mounted to the platform that includes a sensor and a controller, and an energizing system connected to the locomotion assembly, a power supply controller and a communication data bus interconnecting a network of the locomotion controller, the steering controller and the environment recognition module controller as broadly claimed, wherein as understood, (page 1-7), the steering controller of Torrie is coupled to a steering mechanism via a sensor mounted to the steering mechanism which is coupled to the steering controller, and the locomotion controller being coupled to the drive assembly via a sensor mounted to the drive assembly which is coupled to the locomotion controller, such that a central control system is coupled to the locomotion controller, the steering controller and the recognition module controller via a communication data bus so as to achieve at least one predetermined operational mode, such that the data bus allows data between the locomotion controller, the steering controller, and the recognition module controller (figure 1 - 17; paragraph 54 - 81).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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20. Claims 12, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al '287 in view of Boivin et al '586.

Fletcher as stated above disclosed a robotic platform with at least two locomotion members mounted to a body; wherein the locomotion members included an endless track assembly having a driving wheel, a driven wheel, an endless track and a track tensioning assembly that included a support frame (leg 44 and chain 64) that are mounted within the endless track to both the driving wheel and the driven wheel, wherein the driving wheel is received in a ring portion (chain) of the support frame, but failed to show a tensioning sub-assembly for adjusting the tension of the endless track.

Boivin shows a platform mounted to a body with locomotion members having an endless track assembly (figure 1) comprising a driving wheel, a driven wheel, an endless track and a track tensioning assembly, wherein the locomotion members disclose the prior art of providing a track tension means in an endless track arrangement by utilizing a tensioning sub-assembly (figure 2 –3 and 5, column 1), wherein in the track-tensioning assembly includes a support frame 56 with skid plates which are mounted within the endless track 23 to both the driving wheel and the driven wheel (figure 2), wherein the driving wheel is received in a ring portion (at axle 56) of the support frame with shows the prior art of a tensioning sub-assembly (at the far right of the support frame) for adjusting the tension of the endless track, wherein the tensioning sub-assembly includes a driven wheel mounting bracket (bracket at right side of frame support 56 in figure 2 for mounting the driven wheel 28), which is selectively movable within the endless track 23 in a direction away from a driving wheel 24 and generally defined by the endless track as claimed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a track tensioning means to the track tensioning assembly of Fletcher locomotion members, such as suggested by the track tensioning sub-assembly of Boivin in order to provide a simple track tension adjusting means to ensure proper track tension in the endless track of Fletcher as needed to maintain proper tension upon the endless track belts to keep them in due course and prevent accidental loosening as taught by Boivin.

21. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al '287 in view of Boivin et al '586.

Fletcher shows a robotic platform having a locomotion members 40 with a driving wheel and a driven wheel, but failed to show a driving wheel being larger or smaller than the driven wheel.

Boivin shows a platform with locomotion members having an endless track assembly with a larger driving wheel than the driven wheel as claimed (figure 2, column 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the wheel size of the Fletcher locomotion members with an alternate larger or smaller driving wheel in ratio to the driven wheel, such as suggested by the larger driving wheel of Boivin locomotion member with respect to the driven wheel, dependent upon users preference to provide a different drive ratio between the driving wheel and the driven wheel which is well known and old in the transmission art and further to provide an endless track belt with a punctually localized surface contact area with the ground surface as taught by Boivin.

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22. Claims 21 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al '287 in view of Kadonoff et al '658.

Fletcher shows a robotic platform comprising a control system having at least one environment recognition module 17 mounted on one of the at least two locomotion members, but failed to show each of the at least two locomotion members having at least one position sensor and an environment recognition module that included at least one proximity sensor and a long-range sensor mounted to the locomotion member and coupled to the controller and further including at least one ultra-sound sensor and an infrared sensor.

Kadonoff discloses a robotic platform with locomotion members having a control system that discloses the prior art of incorporating a control sensor system for utilizing at least one environment recognition module mounted on one of the locomotion members that includes at least one position sensor and an environment recognition module having at least one proximity sensor, long-range sensor, ultra-sound sensor and an infrared sensor mounted to the locomotion member and coupled to the controller (column 1-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the control means of Fletcher robotic platform with additional or alternate sensors to further monitor and control various parameters to enhance the control and operation of the robotic platform by utilizing various types of sensors, much like those disclosed by Kadonoff's control means, simple to enhance the control of Fletcher robotic platform; as further implied by applicant that the configuration, number and type of sensors used may vary.

Allowable Subject Matter

23. Claims 8, 14 and 30 – 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. Claims 46 and 47 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mancheron '467, Giovanetti et al '932, Won '931, Ziccardi '832, Crane, III et al '971, Miller et al '165, Ballinger '483, Borenstein et al '343, Heki et al '298, Hagihara et al '331, Wilcox et al '196 show a robotic platform.

Haycock '496 and Kendall '246 show an endless track drive assembly.

Wand '551, Asama et al '008, Kobayashi et al '566, Jacobs '246, Buttz et al '639, Katou et al '869, Peshkin et al '542, Bloomfield et al '445 and Kadonoff et al '442 disclose drive assembly control systems.


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26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Yeagley whose telephone number is (571)-272-6655. The examiner can normally be reached on Mon. - Fri; first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley D. Morris can be reached on (571) - 272 - 6651. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D.Y.


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